REMARKS

Claims 39, 41-44, 53, and 55-57 are pending in the present application. Reconsideration of the claims is respectfully requested.

Applicant has added to the argument, below, addressing The Data Game reference as presented by Examiner. In the previous response to the Office action dated 8/15/03, Applicant failed to address this reference. The arguments addressing this reference are now found at the end of section **I. 35 U.S.C. § 103, Obviousness**, below. All issues presented by Examiner are now believed addressed by Applicant. Reconsideration of the claims is respectfully requested.

I.   35 U.S.C. § 103, Obviousness

The examiner has rejected claims 39, 41-44, 53, 55-58 under 35 U.S.C. § 103(a) as being unpatentable over Hughes, in view of Toung, further in view of "The Data Game". This rejection is respectfully traversed. In rejecting the claims, the Examiner states in part:

> Hughes et al. teaches associating spatial relationships with customer data to determine additional information concerning purchases by the customer (see at least col. 16, line 40 – col. 17, line 50, col 18, lines 19-23, col. 20, lines 10-15, 25-65), recording (identifying) paths of customers (see at least col. 18, lines 15-17, 35-40, col. 15, lines 15-50), associating the locations of products with the paths of customers as claimed (see at least (col. 16, line 40 – col. 17, line 50, col. 18, lines 19-23, col. 20, lines 10-15, 25-65) which employs data mining algorithms to generate input data for forming the set of spatial relationships (see at least col. 17, lines –20, 30-45, col. 20, lines 10-15, 25-60) and spatial analysis algorithms to form the set of spatial relationships (see at least col. 20, lines 40-50, col. 19, lines 1-35, col. 13, lines 25-45, col. 18, lines 15-40).
> Toung teaches generating customer data by associating customers with information related to each customer using data mining and associating the information with spatial relationships (p. 1). It would have been obvious to one having ordinary skill in the art at the time of the invention to have used the data mining of Toung in the system of Hughes since the data mining of Toung would have provided the ability to sort patterns by customer information. The "Data Game" teaches performing data mining in order to trace the exact route each customer has taken through the store (p. 2). To the event the claims can be interpreted differently, it would have been obvious to one having ordinary skill in the art at the time of the invention to have generated the spatial relationships including associating the customer path with product placement as in "The Data

Game" since this would have removed the need and associated cost of the tags associated with the items.

Claim 39 is reproduced for reference:

39. (Previously Presented)   A method for determining relationships of data associated with product placement in a retail space, the method comprising the steps of:

generating data relationships using data mining techniques, wherein the data relationships associate individual customers with information related to the individual customers;

generating spatial relationships using data mining techniques, wherein the spatial relationships include relative placement of products within the retail space;

integrating the data relationships with the spatial relationships to determine additional information concerning purchases by the customers;

wherein the spatial relationships further include associations of customer paths through the retail space with product placement within the retail space.

It is respectfully submitted that the combination of Toung and Hughes, even if proper, does not teach the combination of features taught in at least Claim 39. Specifically, as discussed further below, the cited references do not teach or suggest the combination of limitations as claimed, which include a data relationship (which associates customers with customer related information), and a spatial relation (which includes both relative placement of products within the retail space and associations of customer paths through the retail space with product placement).

A fundamental notion of patent law is the concept that invention lies in the new combination of old elements. Therefore, a rule that every invention could be rejected as obvious by merely locating each element of the invention in the prior art and combining the references to formulate an obviousness rejection is inconsistent with the very nature of "invention." Consequently, a rule exists that a combination of references made to establish a *prima facie* case

of obviousness must be supported by some teaching, suggestion, or incentive contained in the prior art which would have led one of ordinary skill in the art to make the claimed invention.

Though Hughes teaches tracing customer paths through the store via gps tracking, it does not appear to teach or suggest generating associations between those paths and product placement by means of data mining.

The only mention of "mining" in Hughes are in column 17, part of a description of the Analyst tool. Hughes teaches:

> The Analyst tool offers users a variety of advanced data visualization decision making and mining tools for measuring and analyzing overall facility performance. It allows a manager to quickly see which parts, for example, in retail, which departments of a store are performing well and which are not with respect to a variety of performance measures. These measures could include total profit, profit per area, and so on. The Analyst tool also offers users a variety of advanced data visualization, decision making, and mining tools for measuring and analyzing micro-level data, for example, SKU(stock keeping unit), colors, patterns, and styles and for analyzing overall enterprise performance. It allows a centralized manager to quickly see how stores are performing within a particular region.

[Col. 17, lines 6-19, emphasis added.]

This passage teaches use of mining for "measuring and analyzing overall facility performance" and "measuring and analyzing micro-level data...." In Hughes, data mining is only mentioned in the context of "analyzing overall facility performance," and "analyzing micro-level data, for example, SKU, colors, patterns, and styles and for analyzing overall system performance," as described above [Col. 17, lines 5-20.] There is no teaching in Hughes that data mining is used to generate associations between customer paths through the retail space with product placement, as claimed in at least claim 39.

Examiner also cites Toung, stating:

> Toung teaches generating customer data by associating customers with information related to each customer using data mining and associating the information with spatial relationships (p. 1).

[Office Action of 03.03.03, p.3.]

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However, Applicant respectfully submits that Toung does not teach "generating spatial relationships using data mining techniques, wherein the spatial relationships include relative placement of products within retail space...wherein the spatial relationships further include associations of customer paths through the retail space with products purchased," as claimed in Claim 39.

Toung teaches the following on p. 1:

Though data mining techniques, managers are <u>extracting information about customer buying patterns that allow them to refine merchandise placement</u>. For example, managers discovered that shoppers were more likely to buy travel alarm clocks if they were placed in the luggage department than in the jewelry department. [Emphasis added.]

It is noted that, according to the claim language of Claim 39, "spatial relationships" of the present invention are generated "using data mining techniques." These spatial relationships, "further include associations of customer paths through the retail space with product placement...."

Though Toung teaches modifying product placement based on data mining information, it does not teach associating "customer paths through the retail space with product placement," by the use of data mining, as is claimed in the present application (e.g., Claim 39). Toung only teaches that product placement can be modified according to the results of data mining. "Customer buying patterns," quoted from Toung, refers not to physical movement patterns through the retail space, but only to the types and patterns of purchases made by customers, as indicated by the above quoted language. There is no teaching in Toung of tracing customer movement through the retail space.

Hence, it is respectfully submitted that at least Claim 39 is distinguished from the cited references. Independent Claim 53 includes similar limitations and is believed to be allowable for the same reasons. Likewise, dependent Claims 41 and 55 include similar limitations and are believed allowable for the same reasons. Finally, by virtue of their dependence from Claims39 and 53, all remaining dependent claims are believed distinguished.

It is also respectfully submitted that the Hughes reference must be modified in order to integrate the teachings of Toung, and that such modification is not obvious.

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Hughes generally deals with the problem of monitoring and maintaining an accurate representation of all inventory in a retail space. For example, Hughes states at col. 1, lines 43-49:

> An object of the present invention in one aspect is to offer users the means to monitor and maintain an accurate representation of the location of all inventory or merchandise of interest in a retail outlet....

Hughes also states its purpose to "give the user the means to employ the data to ascertain the economic/financial impact of changes in layout...." at col. 1, lines 56-57. Note that data mining is not described or applied to generating spatial relationships using data mining techniques...wherein the spatial relationships further include associations of customer paths through the retail space with product placement...." In order to apply the teaching of data mining from Toung to Hughes' system, Hughes must be modified by applying the use of data mining to generate associations between customer paths with product placement. No such teaching is found in either reference, and it is respectfully submitted that one of ordinary skill in the art would not have been motivated to make such a modification from the teachings of the cited references.

With respect to the Data Game reference, Examiner states on p. 3:

> "The Data Game" teaches performing data mining in order to trace the exact route each customer has taken through the store (p.2). To the event the claims can be interpreted differently, it would have been obvious to one of ordinary skill in the art at the time of the invention to have generated the spatial relationships <u>including associating the customer path with product placement as in "The Data Game"</u> since this would have removed the need and associated cost of the tags associated with the items.

[Emphasis added.]

Applicant notes the emphasized portion above, where Examiner cites The Data Game as teaching the claimed limitation of:

> wherein the spatial relationships further include associations of customer paths through the retail space with product placement within the retail space.

However, Applicant respectfully submits that The Data Game does not teach this limitation. The Data Game refers to tracing customer paths at p. 2, stating:

Aside from low prices, the retailer prides itself on its ability to reconstruct customer behavior from cash register tapes. It claims to be able to trace the exact route each customer takes through each store, based on what he or she has purchased.
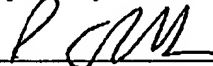
However, the claimed limitation claims not only tracing customer paths through the store, but generating spatial relationships including associations of customer paths with product placement. Applicant respectfully submits that The Data Game teaches only generation of customer paths by referring to objects purchased. The present claim language, recited above, claims associations between customer path and product placement. In other words, The Data Game only teaches how to track a customer through a store by looking at purchases, while the present invention teaches generating relationships between the customer path and product placement.

Applicant also respectfully submits that the record of products purchased (to which The Data Game refers) is not the same as product placement. Examiner appears to equate these two when Examiner asserts that The Data Game teaches, "wherein the spatial relationships further include associations of customer paths through the retail space with product placement within the retail space." For example, product placement may affect a customer's path without the products necessarily being purchased. The Data Game reference only appears to teach that customer behavior (i.e., customer path) can be traced by looking at "register tapes," i.e., by looking at what purchases the customer made. This differs from generating associations of customer path and product placement. For example, the present invention would produce "association" of customer path with product placement; The Data Game's end product, according to the teaching therein, would only produce the customer path, to wit: "...it claims to be able to trace the exact route each customer has taken...based on what he or she has purchased." This teaching does not describe generating an association between customer path and product placement, it only teaches figuring out customer path.

For the reasons set out above, the rejection of Claims 39, 41-44, and 53 is believed overcome.

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Respectfully submitted,

Patrick C. R. Holmes
Registration No. 46,380
Carstens, Yee & Cahoon, LLP
P.O. Box 802334
Dallas, Texas 75380
(972) 367-2001
ATTORNEY FOR APPLICANTS

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